

**FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION**

(Please fill in the highlighted areas)

all sections (IA, IB, IC, etc.) must be addressed or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Ladd Knotek – FWP Fisheries Biologist

B. Mailing Address: 3201 Spurgin Road

C. City: Missoula State: MT Zip: 59804

Telephone: (406) 542-5506 E-mail: lknotek@mt.gov

D. Contact Person: Same as above

Address if different from Applicant:

City: State: Zip:

Telephone: E-mail:

E. Landowner and/or Lessee Name (if other than Applicant): King Ranch Golf Course - Shad Ockler, Manager/Owner

Mailing Address: 17775 Mullan Road

City: Frenchtown State: MT Zip: 59834

Telephone: (406) 626-4044 E-mail: Shadjodi@gmail.com

II. PROJECT INFORMATION*

A. Project Name: Mill Creek Fish Ladder Reconstruction – King Ranch Golf Course

River, stream, or lake: Mill Creek

Location: Township: 15N Range: 21W Section: 34 (SW 1/4)
Latitude: 47.01296 Longitude: 114.24512 within project (decimal degrees)

County: Missoula

B. Purpose of Project:

Reconstruct fish ladder to provide year-round fish passage for adult and sub-adult salmonids on main stem Mill Creek, a 4th order, perennial tributary to the Clark Fork River

C. Brief Project Description:

Mill Creek is a major tributary to the Clark Fork River located ~ 20 miles downstream of Missoula. Retaining wild fish passage to this stream is a management priority as this Clark Fork reach is recruitment-limited and heavily used by anglers. The proposed project is needed to perpetuate upstream passage for adult rainbow trout, rainbow x cutthroat trout hybrids, brown trout and mountain whitefish on main stem Mill Creek by replacing an existing, dilapidated fish ladder that has functioned adequately for the past decade at a water management check dam. The design for the replacement ladder will be similar to the prototype, but include some design modifications that allow effective passage for all sizes and species of salmonids over a greater range of flows.

D. Length of stream or size of lake that will be treated:

Immediate Project Site: ~50 ft (check dam site) that affects miles of upstream habitat

E. Project Budget:

Grant Request (Dollars): \$ 9,000

Contribution by Applicant (Dollars): \$

In-kind

\$

(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ 9,040

In-kind

\$ 6,056

(attach verification - See page 2 budget template)

Total Project Cost: \$ 24,096

F. Attach itemized (line item) budget – see template

G.

Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Rainbow Trout, Rainbow x Cutthroat Trout, Brown Trout, Mountain Whitefish

B. How will the project protect or enhance wild fish habitat?:

Projects provides access for migrating fluvial fish from the Clark Fork River to virtually the entire Mill Creek drainage (~ 8 miles of suitable spawning and rearing habitat)

C. Will the project improve fish populations and/or fishing? To what extent?:

Project provides direct benefit to fluvial trout and whitefish populations in the Clark Fork River that migrate to spawn in Mill Creek. This stream is a significant source of recruitment for the middle Clark Fork River below Missoula (which is recruitment limited).

- D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Project will directly benefit fluvial trout and whitefish populations in the Clark Fork River that migrate to spawn in Mill Creek. This stream is a significant source of recruitment for the middle Clark Fork River below Missoula (which is recruitment limited) and supports 40,000-50,000 angler-days annually.

- E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

King Ranch Golf Course and MFWP are both committed to maintaining this structure, particularly given Mill Creek's importance to the Clark Fork River fishery as a source of wild trout recruitment.

- F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Interim fish ladder installed in ~ 2004 is badly damaged. New ladder will be slightly larger, with more operational flexibility to improve effectiveness over a broader range of flow conditions.

- G. What public benefits will be realized from this project?:

Consistent and continued recruitment of wild trout to the Clark Fork River fishery.

- H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No

- I. Will the project result in the development of commercial recreational use on the site?: (explain):

No

- J. Is this project associated with the reclamation of past mining activity?:

No

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:



Date:

11-28-16

Attachments:

- I. Project Description
- II. Project Budget
- III. Letters of Support from Project Partners
- IV. Map of Project Location
- V. Fish Ladder Specifications
- VI. Land Management & Maintenance Plans
- VII. Photos from Project Site

I. Project Description & Rationale

The proposed project replaces and upgrades an existing fish ladder that was installed on the King Ranch Golf Course Diversion Dam in 2005. The diversion is located near the mouth of Mill Creek, where upstream passage of adult (spawning) salmonids and trout seeking thermal refugia are the emphasis. However, our goal in designing fish passage is to accommodate all fish species and size classes. Primary target species are rainbow trout, rainbow x westslope cutthroat trout hybrids, brown trout, and mountain whitefish. Anticipated ladder specifications are shown in Attachment V. The biggest challenge at this location is providing upstream passage over a range of flow conditions. Vertical slot and pool/weir type designs are the preferred choice for this type of application.

The preferred and typical design for this type of site is a rock ramp or series of rock weirs that require minimal maintenance, pass bed load normally, and function over a range of discharges. However, this option is not currently compatible with water management practices (maximum flexibility in reservoir water elevation needed) at the golf course and would be very difficult to implement at this location. The current check dam elevation is modified frequently using a series of check boards that cover a vertical distance of 4-5 ft. Water that runs over the spillway acts as attractant flow adjacent to the ladder entrance (see top photo in Attachment VII).

MFWP monitored the previous fish ladder by sporadically checking upstream reaches for fluvial trout redds in spring and fall. Redd densities were typically high and no congregations of fish have been noted below the ladder location. If time and resources are available, we plan to install a fish trap upstream of the ladder/dam location to monitor effectiveness once the new ladder is installed.

Both tables must be completed or the application will be returned

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009-2017

(Revised 11/29/2016)

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

****Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). Describe here or in text.**

Reminder: Government salaries cannot be used as in-kind match

****The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a minimum of two competitive bids for the cost of undertaking the project.

****The Review Panel recommends a maximum fencing cost of \$1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

MATCHING CONTRIBUTIONS (do not include requested funds)

[illegible]



Paul Parson, PE*Middle Clark Fork Restoration Coordinator*

November 29, 2016

Future Fisheries Improvement Program
c/o Michelle McGree
Montana Fish, Wildlife & Parks
P.O. Box 200701
1420 E. 6th Avenue
Helena, MT 59620-0701

RE: FWP Funding Request for the Lavelle Creek Culvert Replacement and Mill Creek Fish Ladder Replacement

Dear Panel Members:

I am writing to express my full support of Montana Fish Wildlife and Parks application for funding two important tributary improvement projects in the Middle Clark Fork Drainage; Lavelle Creek culvert replacement and the Mill Creek Fish Ladder replacement.

Trout Unlimited is looking forward to the opportunity to provide technical design guidance for both projects along with project management and construction oversight assistance. Trout Unlimited has successfully worked with Ladd Knotek on similar projects and continues to maintain an effective collaborative relationship.

Sincerely,

Paul Parson, PE



Dear Review Committee and Interested Parties:

This letter regards planned fish passage repairs/improvements and ongoing operation of our irrigation check dam on Mill Creek at the King Ranch Golf Course. This structure has been in place for decades and is a vital component of both our golf course irrigation system and onsite water features. However, we also recognize the importance of wild fish passage and the value of the Mill Creek fishery to our community.

For the past decade, we have accommodated and helped MFWP to maintain the fish ladder on our diversion structure by removing debris and managing water levels. Unfortunately, several high water events and gradual erosion of the concrete have now limited its usefulness. We support the efforts of MFWP and Trout Unlimited in reconstructing the ladder and will continue to maintain the ladder as part of our structure when the project is completed.

King Ranch and its owners, the Ockler family, have gone to great lengths, both financially and physically in an effort to re-naturalize the river frontage on our property. Over the course of the last 5 years we have abandoned 50+ acres of golf course fronting the river and rebuilt new golf holes farther inland. As a final part of our plan, we look forward to working with the MFWP and other conservation partners to reestablish a more natural, stable and healthier river bank.

Please join us in supporting this worthwhile project.

Sincerely,

A handwritten signature in black ink, appearing to read "Shad Ockler", written over a horizontal line.

Shad Ockler

King Ranch Golf Course



November 21, 2016

Dear Future Fisheries Panel Members and Review Team:

As President of the WestSlope Chapter of Trout Unlimited and our over 850 members, it gives me great pleasure to confirm that our chapter will contribute \$30,000 for the planned enhancement work on streams in the Missoula area, including projects on Mill Creek, LaValle Creek, and Marshall Creek. We believe these projects are vital to improving spawning sites and juvenile fish survival and will lead to healthier and more abundant fish in the Clark Fork drainage. Importantly, these projects will also contribute to improving conditions for native west slope cutthroat, a species in particular that needs help to recover and thrive.

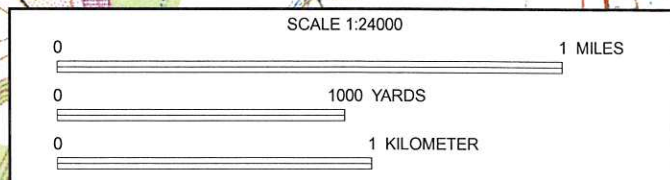
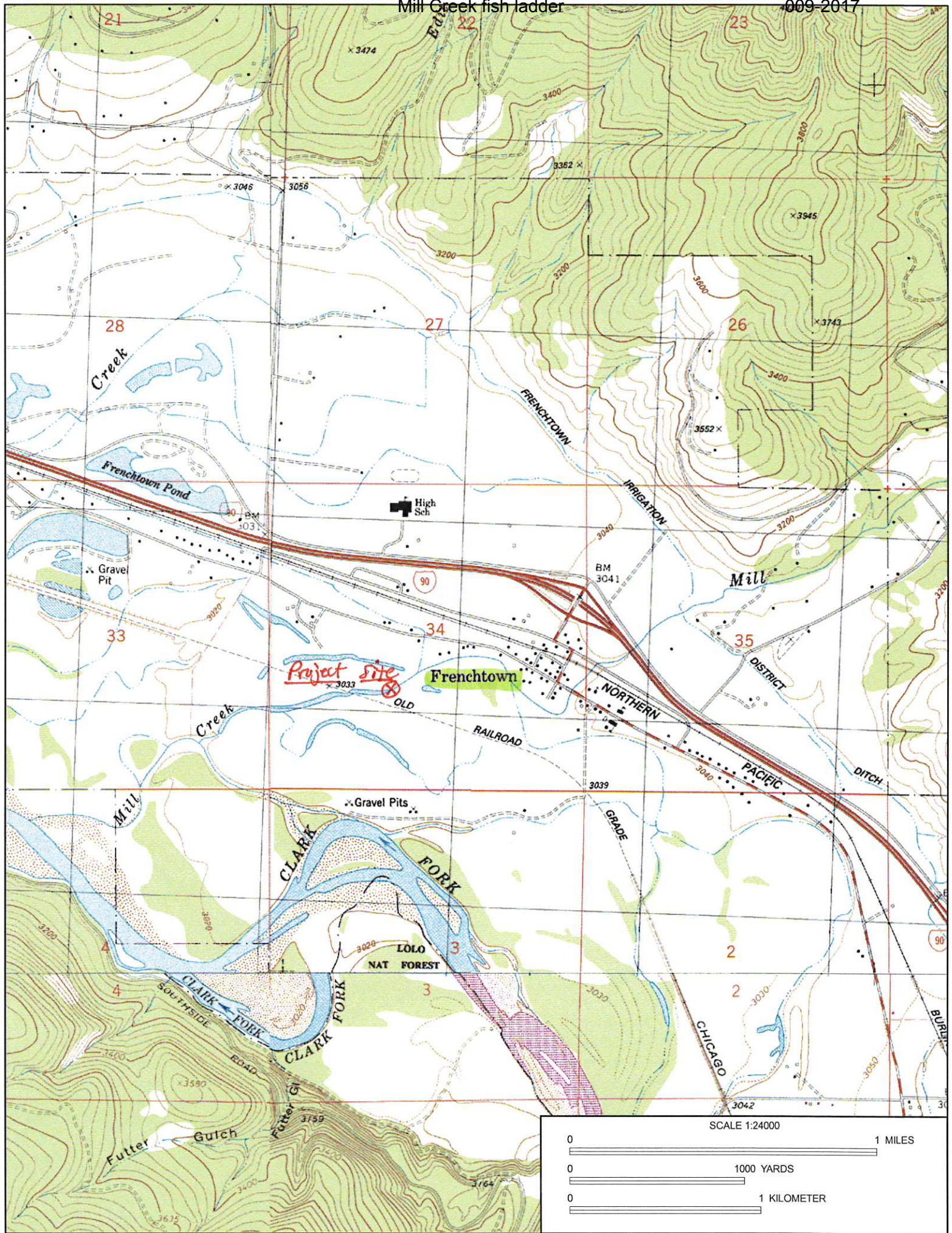
The WestSlope Chapter of Trout Unlimited supports these projects and hopes you will strongly consider requests for matching funds that will facilitate implementation. This is important work and part of our chapter's on-going financial support of critical stream enhancement in the Missoula area. We look forward to helping with future projects as well.

If you need further information please don't hesitate to contact me at 406 327-9990 or mark@makdirect.net

Thank you,

A handwritten signature in black ink, appearing to be "Mark Kuipers".

Mark Kuipers, President
WestSlope Chapter of Trout Unlimited
PO Box 7165
Missoula, MT 59807
406 327-9990



V. Anticipated Fish Ladder Specifications

Fish ladder specifications will be based on the current ladder's performance, target species/sizes, and predicted effectiveness over a range of flow conditions since 2005. Final engineering and modeling will take place in January 2017 when full funding is obtained. Draft designs will be prepared by Ladd Knotek (FWP Biologist) and Paul Parson (Trout Unlimited Engineer) and peer-reviewed by Columbia Basin fish passage experts.

Anticipated Specifications:

Ladder Type: Vertical Slot or Pool & Weir Fishway (see examples below)

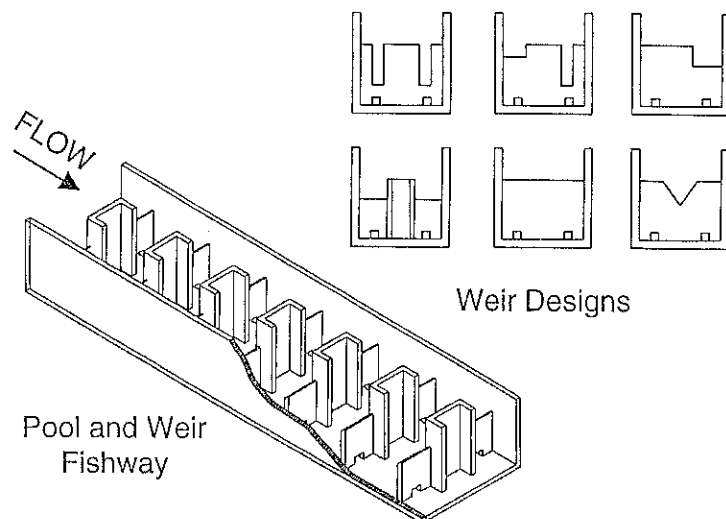
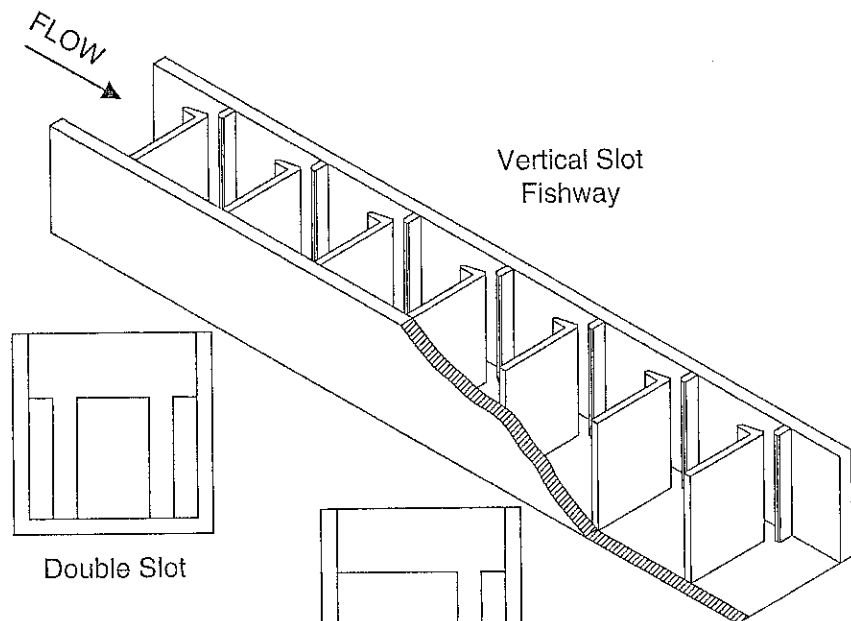
Dimensions: 42"x42"x22 Ft

Slope: 15-17%

Operational Flow Range: 1-4 cfs

Construction Materials: 3/8" Powder-coated Steel

Accessories: Steel Trash Rack, Steel support limbs, Concrete/Rock Base



VI. Land Management & Maintenance Plans

The fish ladder on Mill Creek at the King Ranch Golf Course has been managed and maintained cooperatively by the golf course staff and Montana Fish, Wildlife & Parks for more than a decade. Both entities are committed to this project and will continue to operate and maintain the ladder as long as the diversion dam is in place

Photos of Mill Creek Diversion and Fish Ladder



Functional ladder shortly after construction in 2005



Recent photo of dilapidated fish ladder in 2016